Federation Management Technical Exchange

Background - Technical Exchanges

- **HLA evolution is based on feedback from users**
- **Important to establish a mechanism for capturing user experiences in areas of specific interest**
- **Series of technical exchanges was held since he last AMG**
  - **Federation Management**
  - **Security**
  - **Object Model**
  - **Time Management**
  - **Data Distribution Management**
- **Purpose of these exchanges was to open discussion among AMG programs on their uses of HLA as a basis for understanding needs for HLA evolution**

Federation Management Technical Exchange

- Held on 14 November, at DMSO
- ~20 participants
- Included representatives of programs involved in training, testing, and acquisition applications of HLA
- Presentations from
  - SBD - Henson Graves
  - CCTT - Peter Berggren
  - WARSIM - Ken Castner
  - Security Architecture - Jan Filsinger

Background - Federation Management

- **Fundamentals**
  - **Basic HLA construct is the federation**
  - **Emphasis on HLA is on supporting runtime execution**
  - **Rules, IFSpec and OMT provide basic building blocks for wide scope of uses**
- **Applications use the HLA to support their needs**
  - **Use ‘federations’ in combinations and overtime for different functions in their application domain**
  - **Exploit HLA capabilities to support these functions**

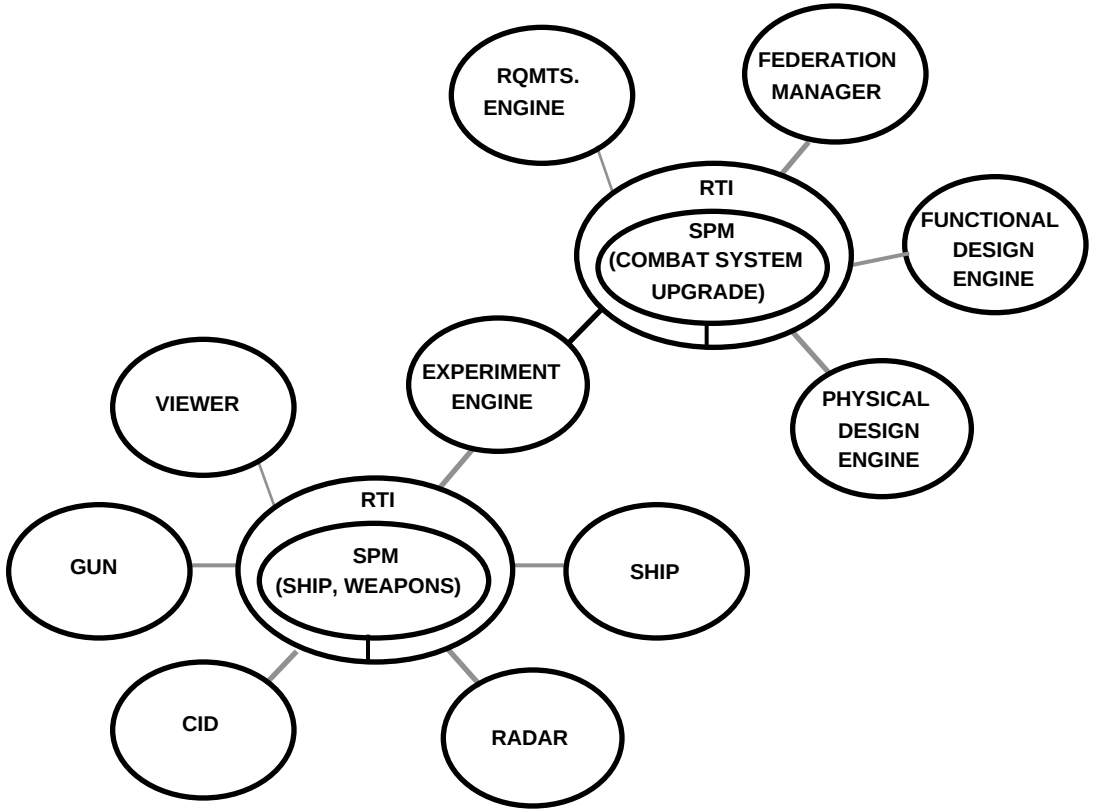
How is HLA envisioned to be used based on the baseline experience projected on program needs?

Do the baseline HLA capabilities support these projected needs?

Summary of Discussions

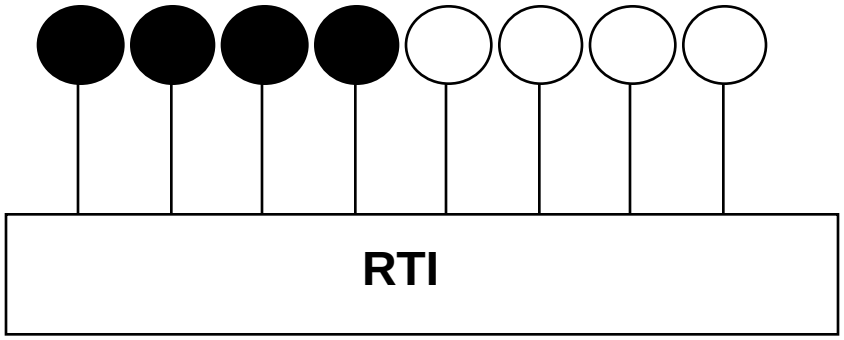
- **Summarize the discussions in terms of several, somewhat overlapping cases of use of HLA**
  - **Hierarchy or ‘web’ of federations (SBD)**
  - **Nested federations (CCTT/WARSIM)**
  - **Combined federations (Security)**
- **Illustrate the nature of the discussion at the technical exchange**
  - **Offer examples of more general types of uses of HLA**

Hierarchy or 'Web' of Federations



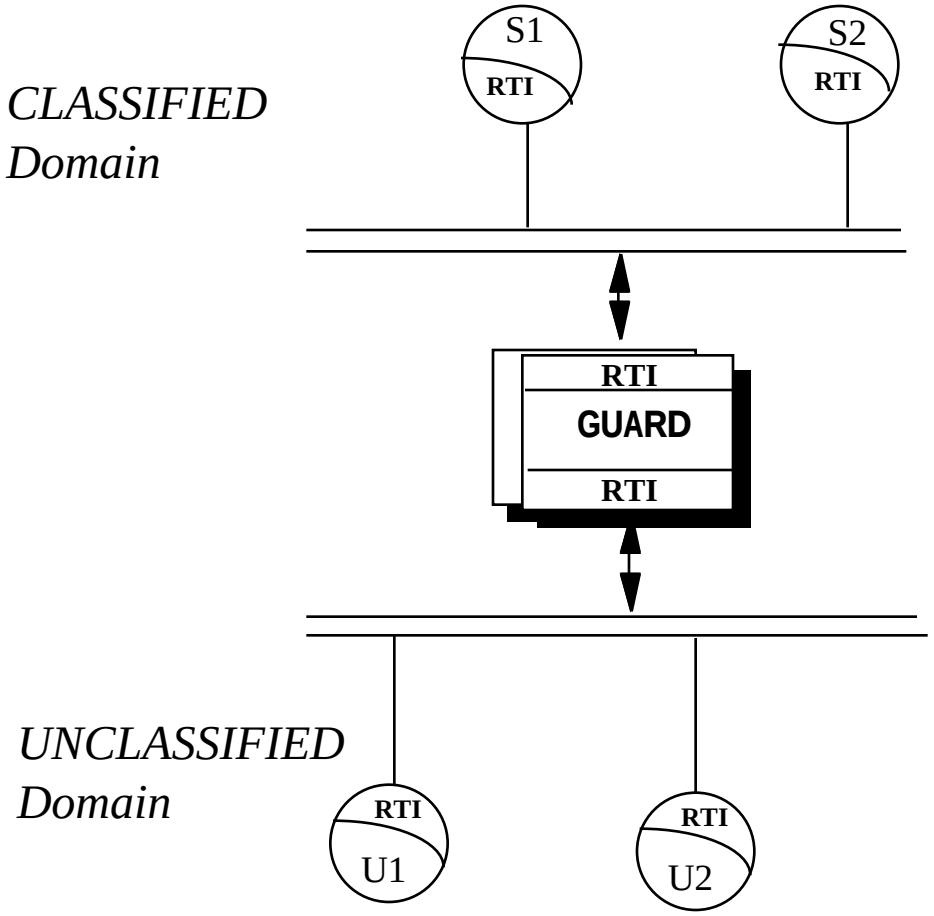
- **Different federation address different aspects of system acquisition**
- **Federations are linked via federates which participate in multiple federations, at different times in acquisition process**
  - **'Context Managers'**
- **Federations are persistent; are used repeated during system acquisition life cycle**
- **Ball/TRAXX demonstration at IITSEC**

Nested Federations



- Some applications may include federates which are distributed components of a system (e.g. CCTT) which will both
  - share data unique to that systems and
  - share data with other federates outside of that system
- HLA supports this several ways
  - Two federation executions with some federates (e.g. CCTT components) joining both
  - One federation execution with different federates publishing/ subscribing to subsets of FOM data
- Tradeoff in ease of development and runtime development

Combined Federations



- **HLA security architecture includes a 'guard federate'**
  - **a member of multiple federation executions**
  - **manages the runtime flow of data between federation executions**
- **Different federation executions**
  - **handle data in different security domains**

Results

- **Need better terminology to describe these different uses of HLA**
- **Planned functional decomposition of the Guard Federate planned for the security architecture development could both benefit and benefit from continued exchange with other programs because of the more general applicability of the overall approach to configuring HLA federations**
- **Need a better understanding of MOM and its potential support for these types of HLA applications, as well as their needs for management information**
- **At this point it appears that the current HLA capabilities can support the envisioned applications**
  - **need working examples**

Plans

- **Convene another technical exchange once projects have had sufficient opportunity to implement HLA 1.0 applications**
- **Use that experience to both**
  - **drive development of terminology and**
  - **assess support by**
    - **HLA baseline capabilities and**
    - **MOM**